

Cucumber Beetles

K. A. Delahaut



Striped cucumber beetle (top) and spotted cucumber beetle (bottom)

There are two common species of cucumber beetles in Wisconsin: **striped** and **spotted**. The striped variety is a more serious pest in the state. Cucumber beetles are a problem on vine crops because they transmit the bacterial wilt organism. Vine crops attacked by these beetles include cucumbers, muskmelons, watermelons, squash and pumpkins. However, cucumbers and melons are most at risk because they are susceptible to bacterial wilt.

Appearance

The striped cucumber beetle (*Acalymma vittatum*) is 1/5-inch long and yellow-green in color with three black stripes running the length of its body. It is often confused with the western corn rootworm beetle that is not a pest of vine crops but is often found feeding on the pollen of cucurbit blossoms. To distinguish between the two, look at the undersides of their abdomens: striped cucumber beetles have black abdomens while the abdomens of western corn rootworms are yellow-green. Spotted cucumber beetles (*Diabrotica undecimpunctata howardi*) are yellow-green with 12 black spots on their backs.

Symptoms and effects

Cucumber beetle larvae feed on roots and stems and can stunt or kill seedlings or transplants. The adults feed on stems, foliage and fruit. More importantly, these beetles transmit the bacteria that causes bacterial wilt. This disease plugs the water-conducting vessels of the plant, eventually killing it. Adults pick up the bacteria when they feed on infected weeds in early spring. When the beetles begin feeding on cucumbers and muskmelons (bacterial wilt is not usually a problem in pumpkins and squash) they spread the bacteria either through their feces or contaminated mouthparts. After the bacteria enters the plant, it travels through the vascular system and blocks the vessels.

The first symptom of bacterial wilt is a distinct wilting of individual lateral leaves. Eventually, the entire plant wilts and dies. Cutting through the stem and holding the cut ends together for ten seconds can help you diagnose the disease. Slowly pull the ends apart and look for white, viscous sap which is the bacteria reproducing in the xylem, or water-conducting tissue. Adult cucumber beetles are such effective carriers of the bacteria that serious crop damage can occur if as little as 10% of the beetles are infected.

Life cycle

Striped cucumber beetles overwinter as adults in protected areas. They become active in mid- to late May. Females lay their eggs in the soil at the base of cucurbits. The beetles are attracted to the chemical cucurbitacin that is produced by the plants. The small white larvae feed on plant roots for 2–3 weeks before pupating in the soil. Striped cucumber beetles produce one generation per year.

The spotted cucumber beetle does not overwinter in Wisconsin. Adults migrate north in early to mid-July. Because they arrive so late in the summer, they are seldom a serious problem.

Scouting suggestions

Plants infected with bacterial wilt will not recover. It is therefore important to control the beetles early in the season to prevent the spread of the disease in the first place. Scout fields for adult beetles 2–3 times per week early in the season and weekly thereafter. Pay particular attention to field edges where beetles tend to congregate initially. Treat when there are more than 4–5 adults per 50 plants. High beetle populations in excess of 20 per plant may transmit the bacterial wilt organism before insecticides have a chance to control the beetles.

Control

Non-chemical: You can achieve non-chemical control in small plantings by covering the plants with floating row covers to keep the beetles out. Make sure you uncover flowering plants to allow bees to enter and pollinate the

plants. If bacterial wilt infections have already occurred, remove the diseased plants immediately to prevent the spread of the disease while insects are present.

Chemical: There are several insecticides available for control of cucumber beetles. Refer to the University of Wisconsin-Extension publication *Commercial Vegetable Production in Wisconsin* (A3422) for a complete listing of available products. If the insecticide carbaryl is selected, be very careful when making applications while bees are present. Apply it late in the day to reduce bee mortality. *Adios*[®] is a relatively new insecticide that combines cucurbitacin, the chemical that attracts cucumber beetles to vine crops in the first place, with a very small amount of carbaryl. The cucurbitacin causes the beetles to feed compulsively and ingest the insecticide while reducing bee mortality.

When to scout for striped and spotted cucumber beetles					
April	May	June	July	August	September
early mid late	early mid late	early mid late	early mid late	early mid late	early mid late

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